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Interpolating GEOSAT Data to a Regular Grid

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GEOSAT altimetry which has been processed to sea surface topography represents a very sparse and asynoptic sampling of the oceanic mesoscale structure. The utility of this data to produce nowcasts and to initialize and update circulation model forecasts could be greatly improved by interpolation onto a grid which is regular in space as well as time.

A method to perform this interpolation based on spatial empirical orthogonal functions coupled with Fourier series in time is presented. A video of the sea surface topography in the western Gulf Stream region based on altimetry from the GEOSAT exact repeat mission will be shown.

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